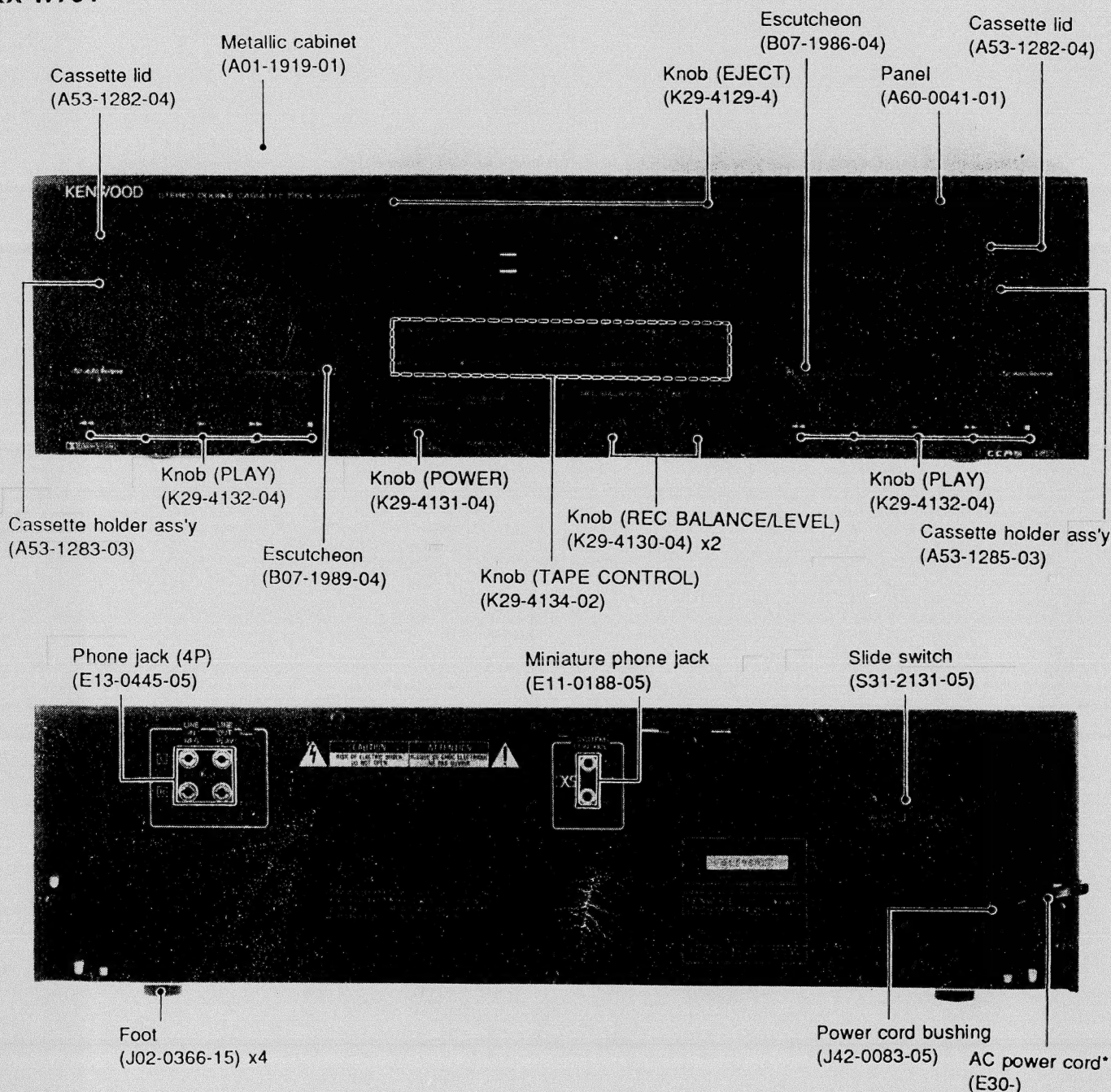


MECHANISM UNIT MANUAL

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KX-W791

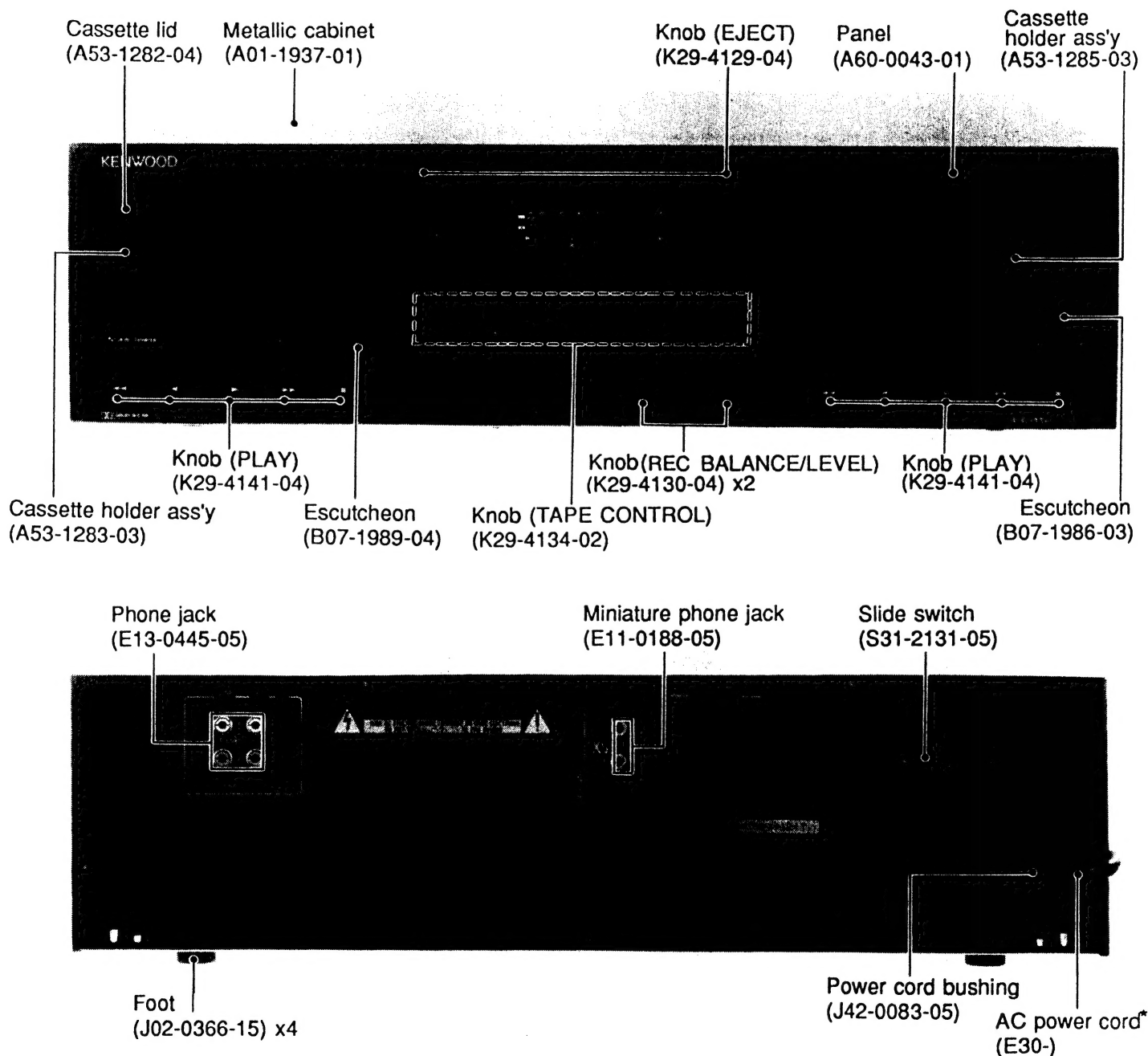


*Refer to parts list on page 32 of ORIGINAL SERVICE MANUAL

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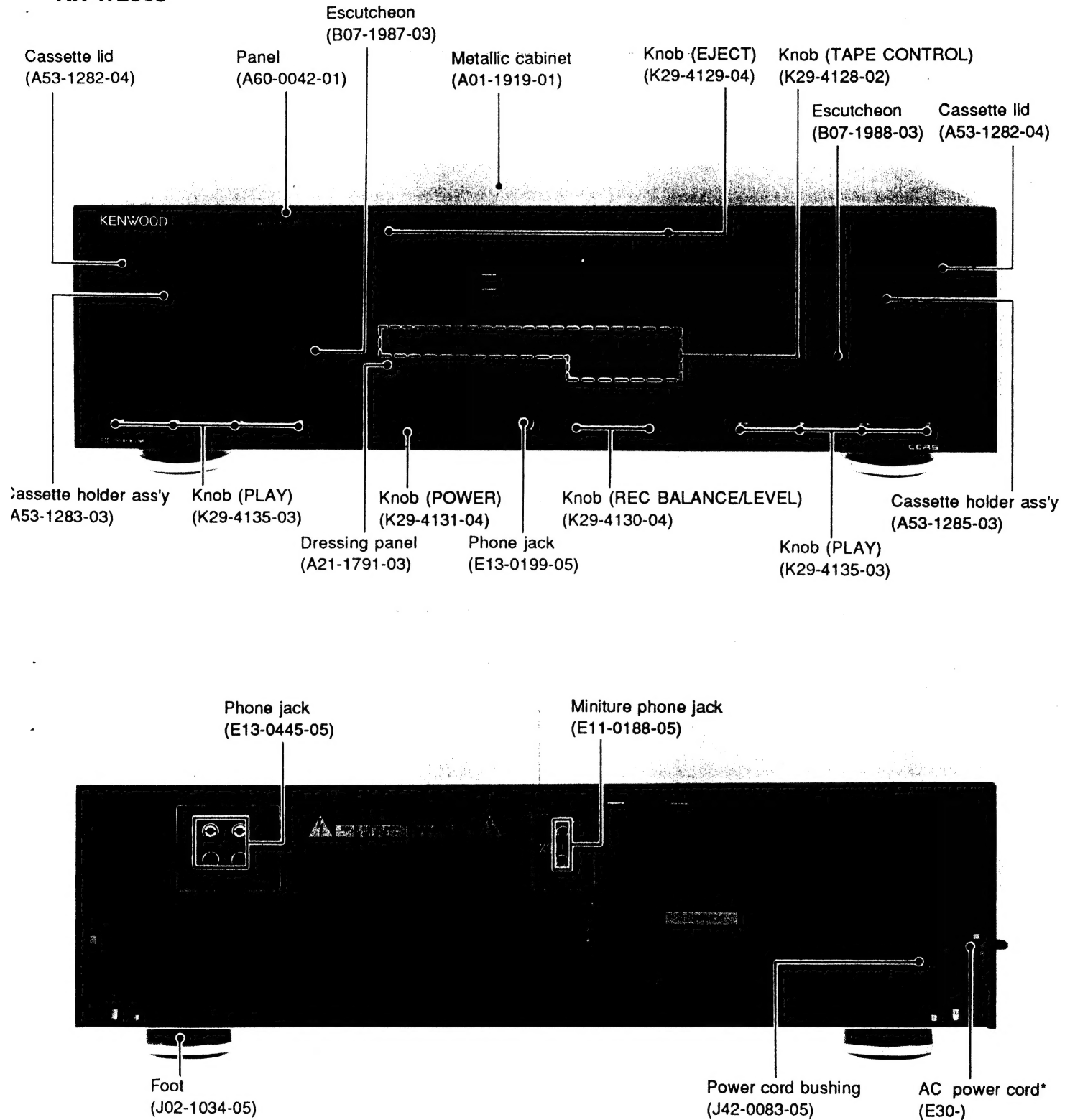
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KX-W891



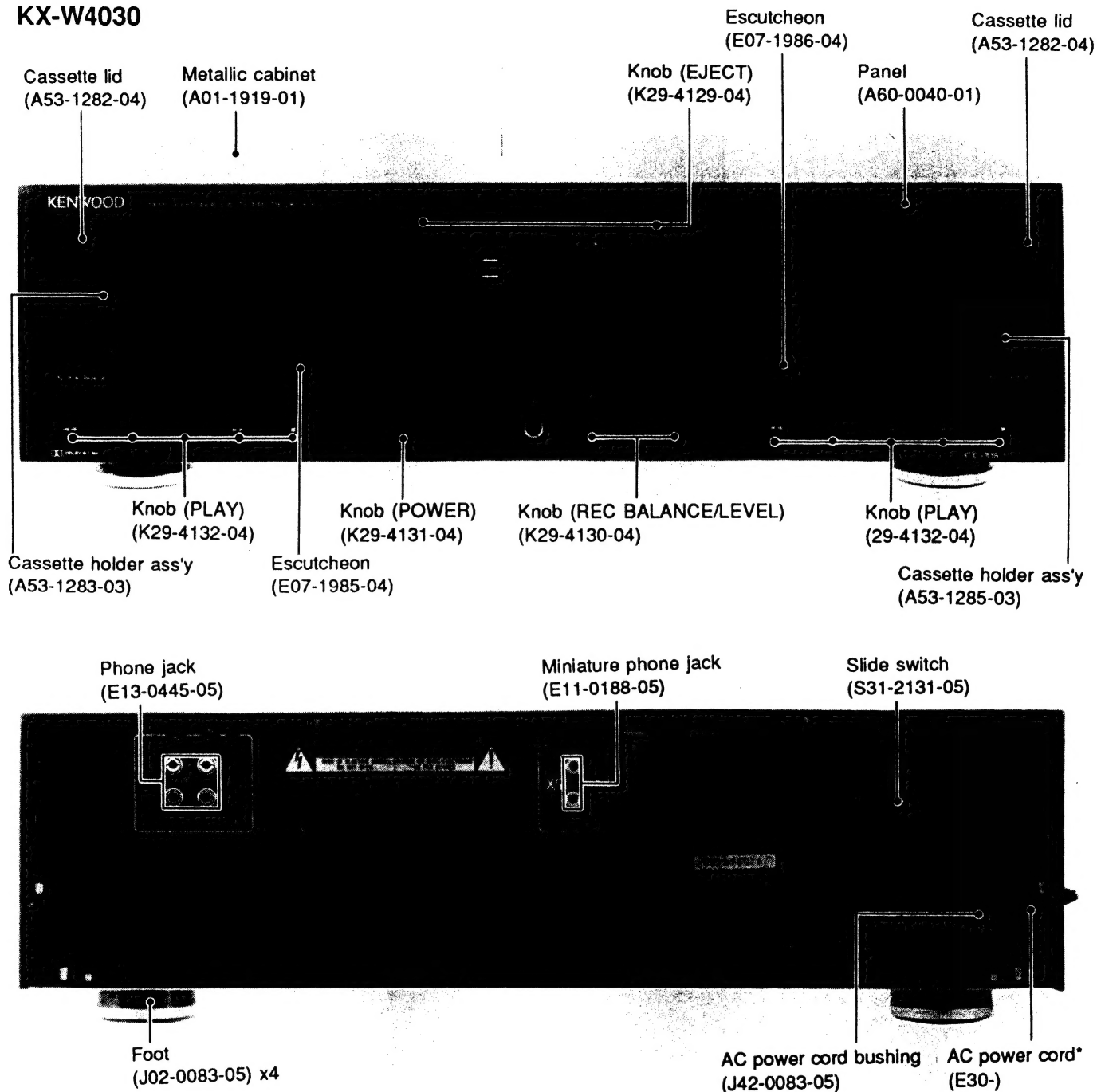
*Refer to parts list on page 32 of ORIGINAL SERVICE MANUAL

KX-W2030



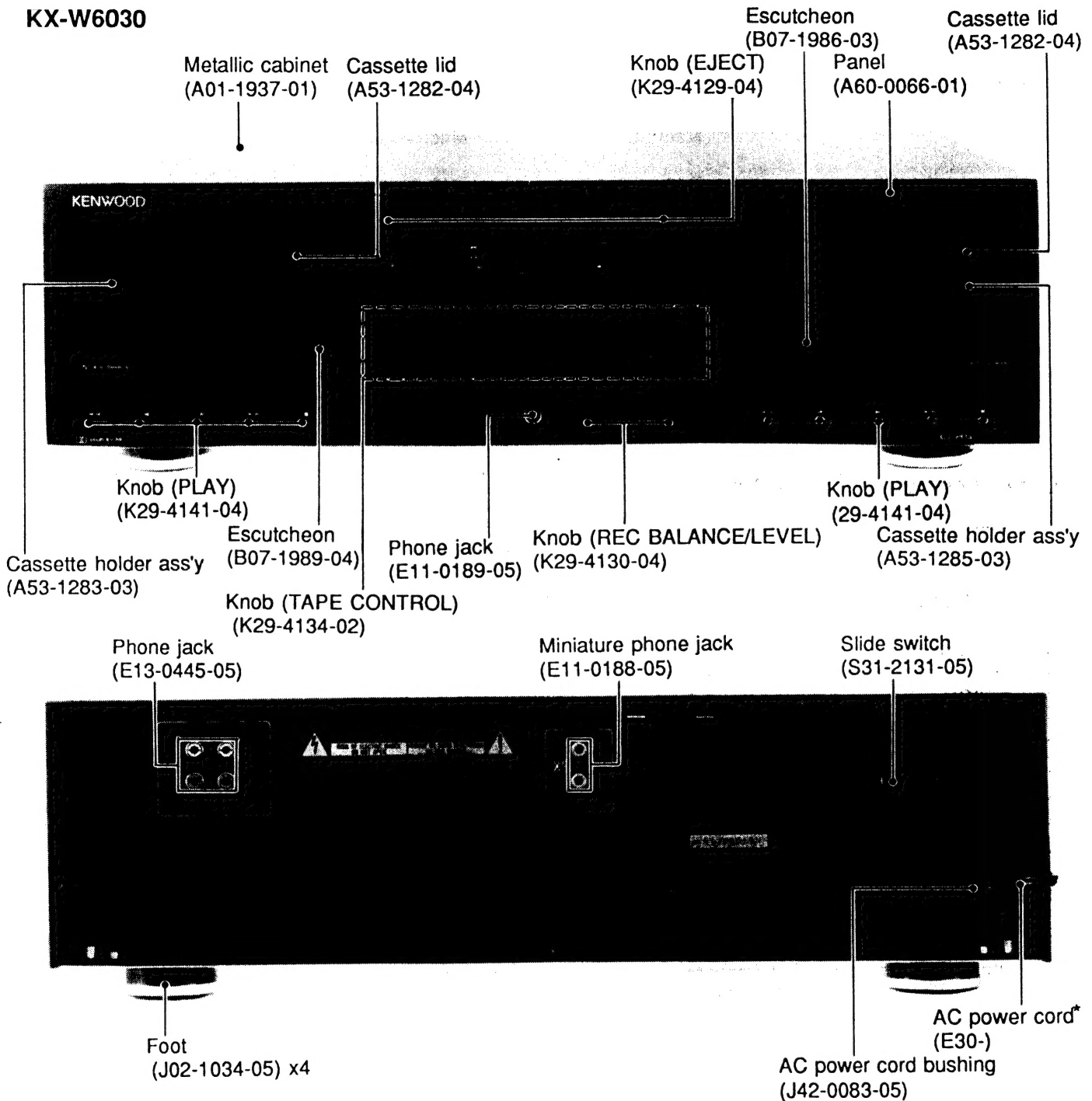
*Refer to parts list on page 32 of ORIGINAL SERVICE MANUAL

KX-W4030



*Refer to parts list on page 32 of ORIGINAL SERVICE MANUAL

KX-W6030



*Refer to parts list on page 32.

*Refer to parts list on page 32 of ORIGINAL SERVICE MANUAL

MECHANISM ESCRIPTION

Mechanism operation

The mechanisms in the KX-W891, W6030, W791, W4030, and W2030 cassette deck are described below.

Part Numbers

	Mechanism A	Mechanism B
KX-W891	D40-0962-05	D40-0961-05
KX-W6030	D40-0962-05	D40-0961-05
KX-W791	D40-0962-05	D40-0961-05
KX-W4030	D40-0960-05	D40-0961-05
KX-W2030	D40-0963-05	D40-0964-05

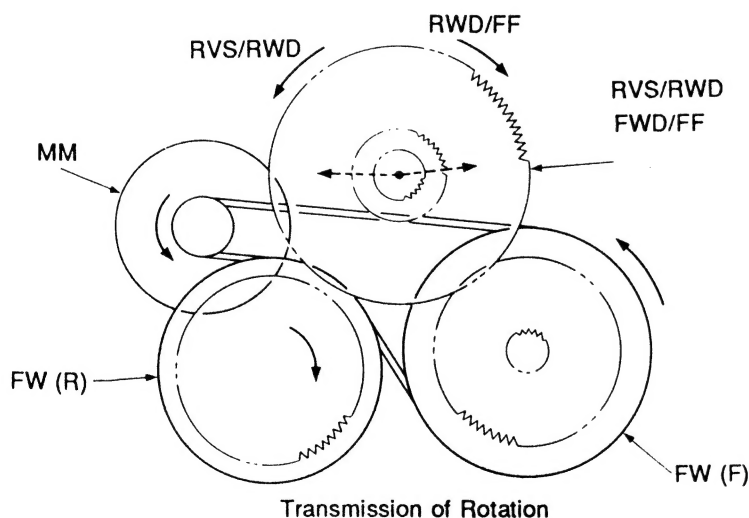
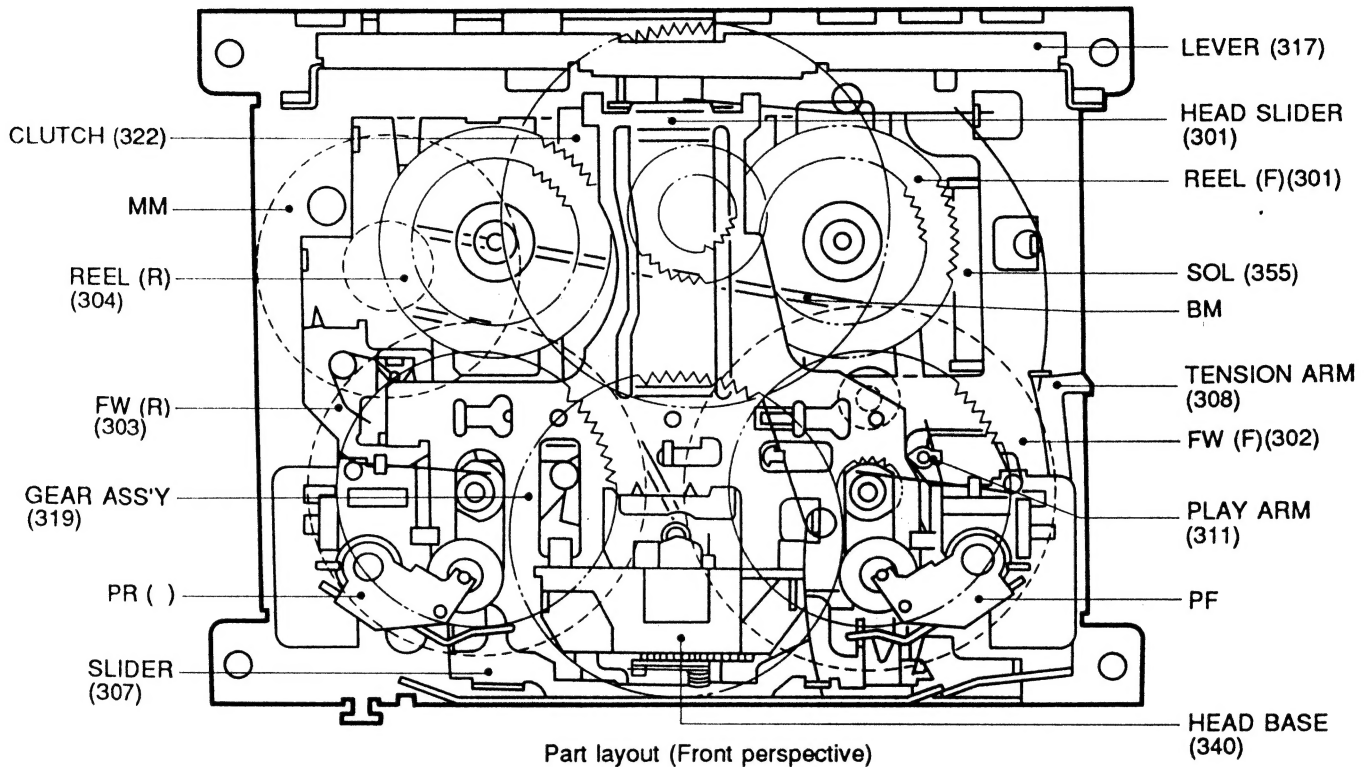
Differences between mechanisms

	0962	0961	0960	0963	0964
HEAD SLIDER	A10-2867-08	←	←	A10-2874-08	←
HEAD BASE	J90-0674-08	←	←	×	×
TENSION ARM	D10-3182-08	D10-3181-08	D10-3182-08	←	D10-3181-08
SLIDER	D10-3180-08	←	←	×	×
FW(R)	D01-0133-08	←	←		
HEAD LEAD	J25-6284-08	←	J25-6285-08	×	×
HEAD	T39-0019-08	←	T31-0064-08	T31-0065-08	T32-0322-08
E HEAD	T39-0019-08	←			T34-0342-08
	(RVS R/P)	(RVS R/P)	(RVS P)	(ONE WAY P)	(ONE WAY R/P)

MECHANISM DESCRIPTION

Mechanism operation description

Figures inside () in the diagram indicate the Ref. Nos. in the parts list. The illustrations are perspective from the front unless otherwise specified.



Driving power:	130 g-cm or more
Take up torque:	35~75 g-cm
FF/REW torque:	70~160 g-cm
Back tension torque:	3~8 g-cm

The main motor rotates the forward and rear flywheels with a belt, and the forward and reverse hubs via the clutch assembly.

MECHANISM DESCRIPTION

Forward playback/recording

1. Press the PLAY key.
2. The solenoid is energized for 200 ms, and stop (a) of play arm (311) is released from stop (b) of gear assembly (319). (Fig. 1)

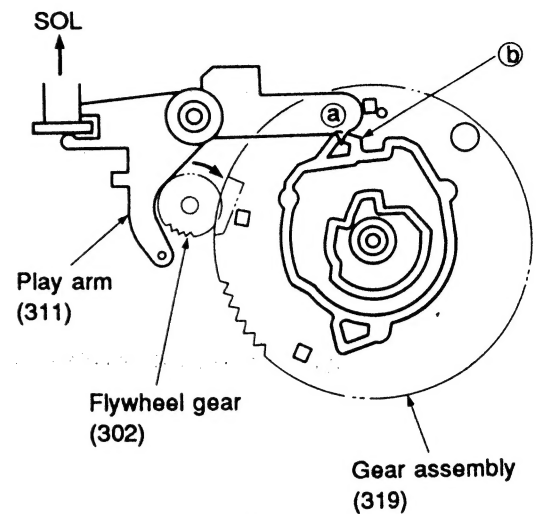


Fig. 1

3. Since cam (d) is pushed down by projection (c) of head slider (301), the gear assembly engages with the forward flywheel gear, and starts turning. (Fig. 2)

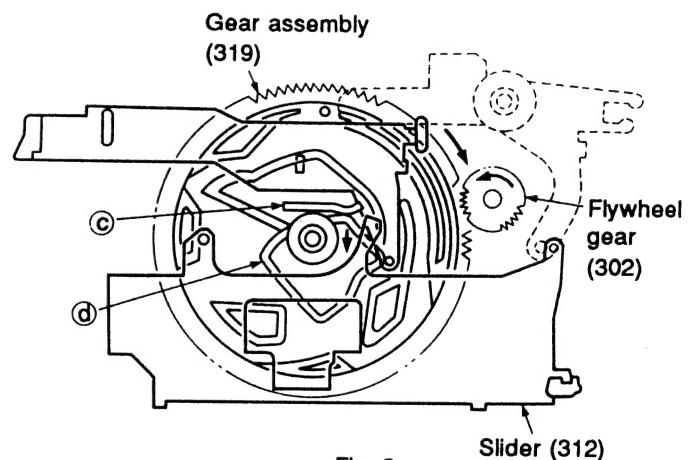


Fig. 2

4. The play arm is pulled by the solenoid, and boss (e) pushes projection (f) of slider (312), so boss (g) on the slider is moved along track (A) by cam (h).
5. Slider (312) is moved in the direction of arrow (B). (Fig. 3)

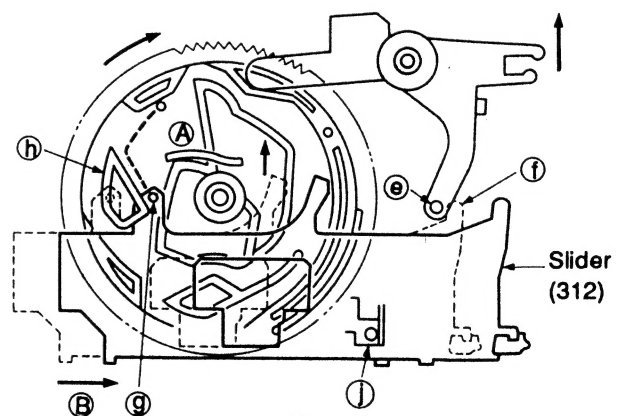
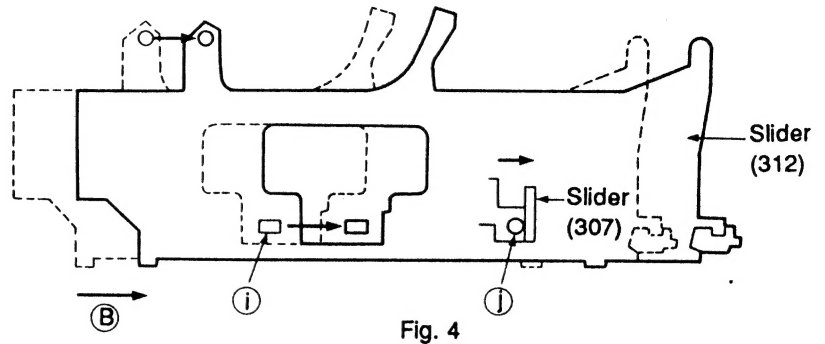


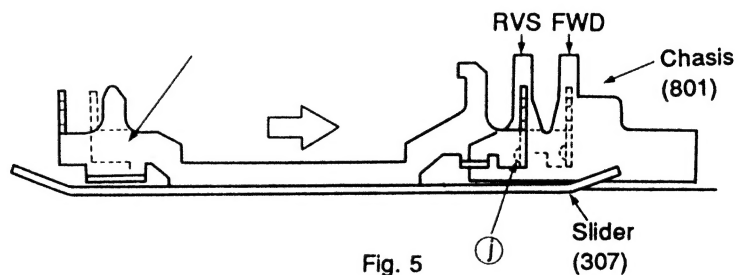
Fig. 3

MSM DESCRIPTION

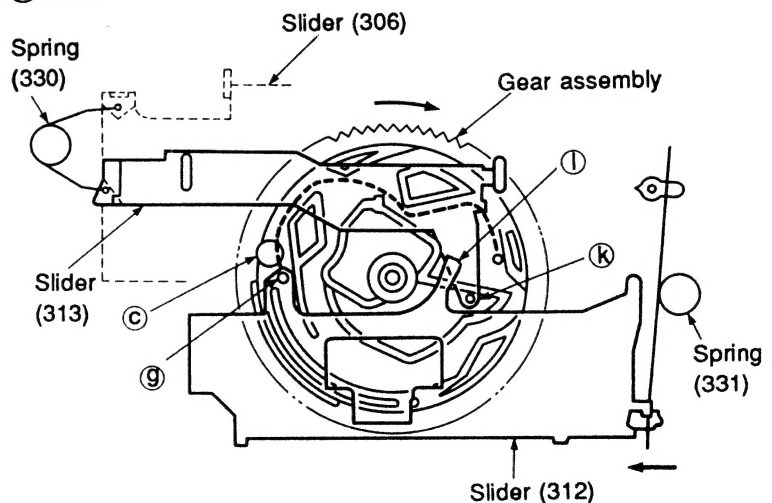
6. When slider (312) moves, reversing rod ① of the rotary head moves in the direction of the arrow, and the head is rotated in the forward direction. (RVS for STOP) (Fig. 4)



7. Slider (307) is moved by boss ① on slider (312), and chassis (801) is moved to the FWD position. (Figs. 4 and 5)

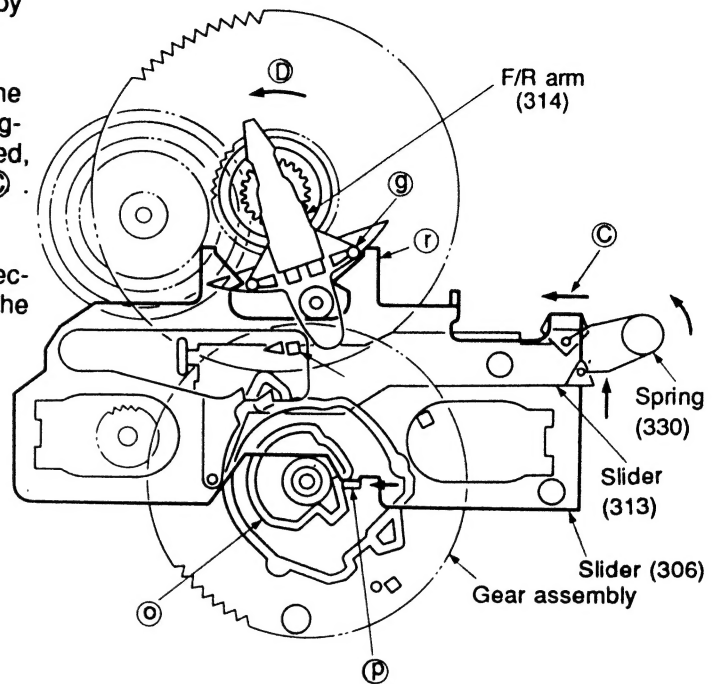


8. The head slider is lifted by the gear assembly cam.
9. The gear assembly continues rotating. The solenoid is deenergized at this time. Slider (312) is pushed in the direction of the arrow by spring (331), boss ⑨ passes through track ③, and boss ① does not touch projection ①. (Fig. 6)

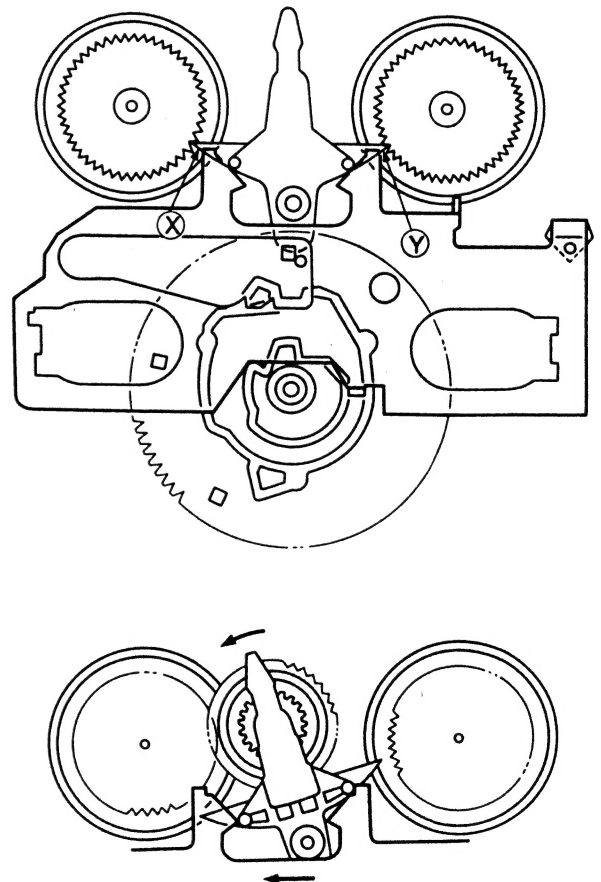


MECHANISM DESCRIPTION

10. As the head slider lifts, slider (313) lifts, and slider (306) is pushed in the direction of arrow ③ by spring (330). (Figs. 6 and 7)
11. In the FWD PLAY/REC position, cam ② on the gear assembly is positioned as shown in the figure. Since projection ④ on slider (306) is moved, slider (306) is moved in the direction of arrow ③ (Fig. 7)
12. Boss ⑤ on F/R arm (314) is pushed by the projection of slider (306), and the F/R arm is swung in the direction of arrow ①. (Fig. 7)



13. In the STOP position, the F/R arm stops at the center, and the forward and reverse hubs are braked by projections ⑧ and ⑨. If the F/R arm tilts, the brake is released, and the hubs can rotate.



MECHANISM DESCRIPTION

14. When the F/R arm tilts, the forward flywheel (302) gear engages with clutch gear (322). The small gear on F/R arm (322) engages with the outside gear of the forward hub, and the hub rotates, winding the tape. (Fig. 9)

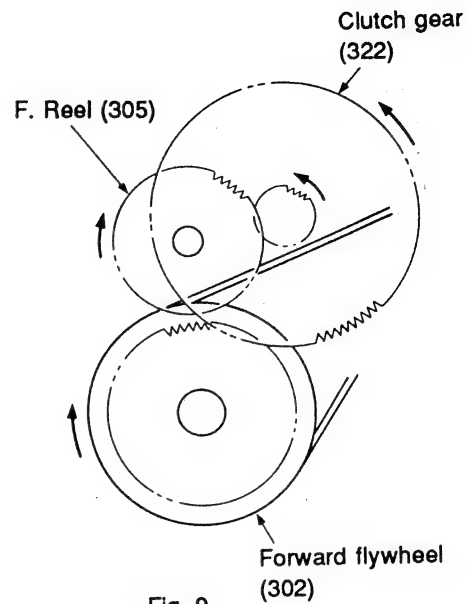


Fig. 9

15. In the FWD PLAY/REC position, gear assembly cam Ⓓ lifts the head slider and slider (307) above it. The pinch roller contacts the capstan, and forward playback starts. (Fig. 10)

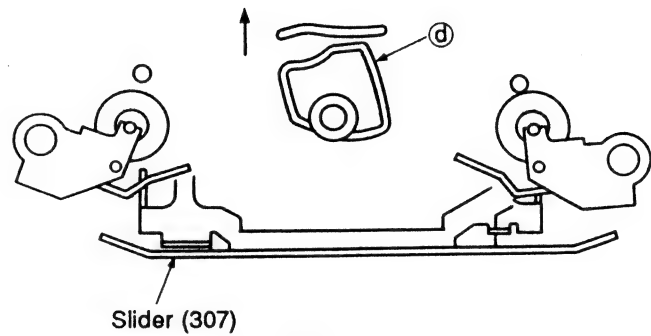


Fig. 10

Reverse playback/recording

1. Press the reverse PLAY/REC key.
2. The solenoid is energized for 50 ms.
3. Since slider (312) is pushed by spring (331), boss Ⓔ moves along track Ⓔ.
4. The head slider rises, but the reversing rod of the head is not moved, so the mechanism remains in the RVS position. (Fig. 11)

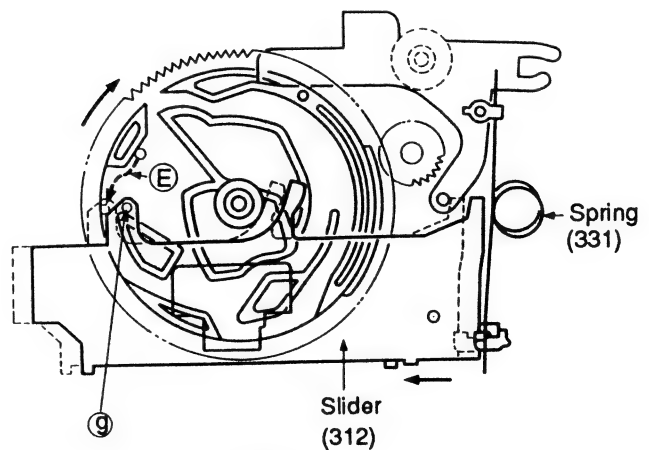
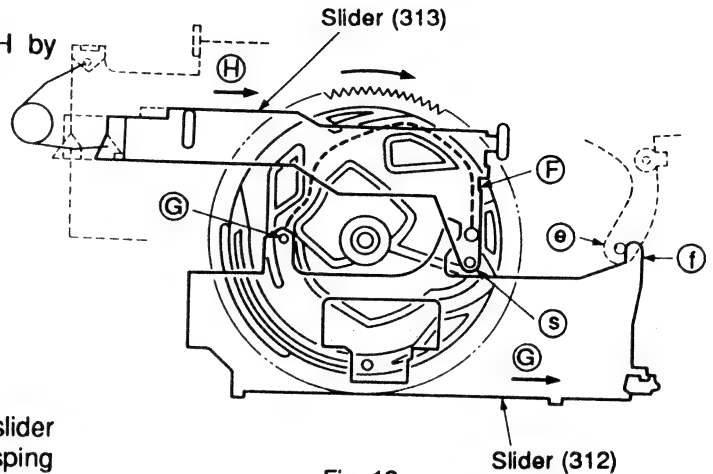


Fig. 11

MECHANISM DESCRIPTION

5. The gear assembly continues rotating. When the solenoid is energized again, boss *e* of the play arm holds projection *f* of slider (312), so boss *g* on the slider moves along track *F*, and slider (312) moves in the direction of arrow *G*.

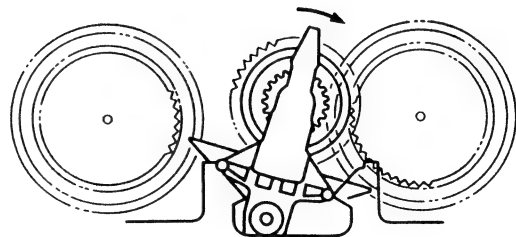
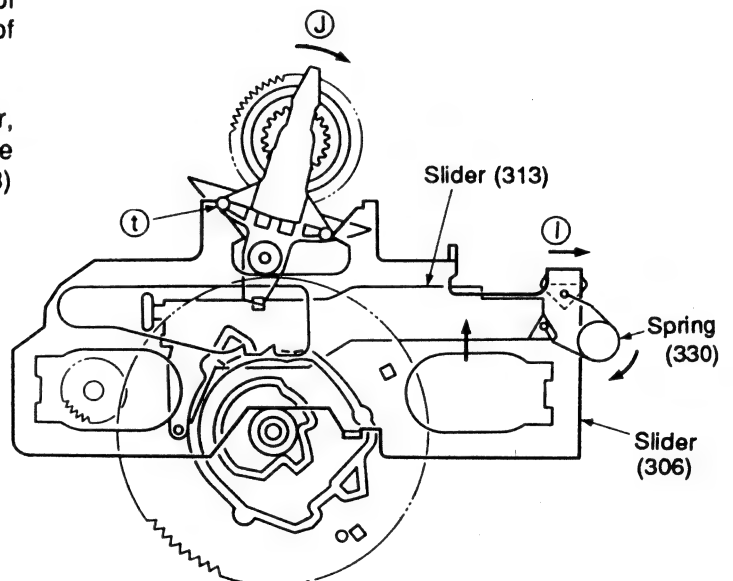
6. Slider (313) is moved in the direction of arrow *H* by the boss. (Fig. 12)



7. When the head slider lifts, slider (313) lifts, and slider (306) is pushed in the direction of arrow ① by spring (330). (Fig. 13)

8. Boss ① of the F/R arm is pushed by the projection of slider (306), and the arm is swung in the direction of arrow ② (RVS position). (Fig. 13)

9. The reverse flywheel engages with the clutch gear, and the small gear in the F/R arm engages with the reverse hub gear. The tape is rewound. (Fig. 13)
The brake is released at this time.



MECHANISM DESCRIPTION

10. As the head slider lifts, slider (307) lifts as well, the pinch roller on the reverse side contacts the capstan, as shown in the figure, and reverse playback/recording starts. (Fig. 14)

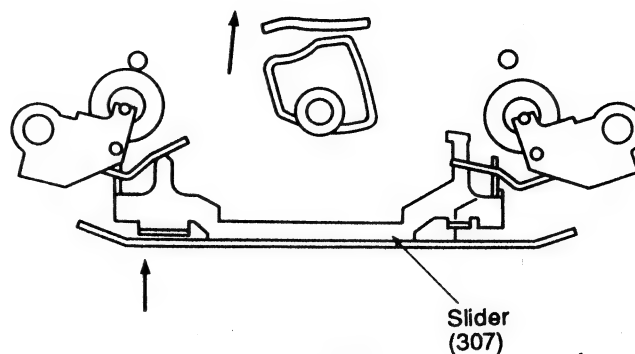


Fig. 14

Fast forward

1. Enter the forward play mode.
2. The solenoid is energized from the PLAY head position, and the cam gear rotates to the FF position.
3. The head slider goes down, and the pinch roller is separated from the capstan. (Fig. 15)
4. The clutch assembly is moved forward by projection a of the cam gear. (Fig. 16)
5. This changes the gear ratio of the clutch assembly and hub assembly, and the tape can be rewound quickly. (Fig. 17)

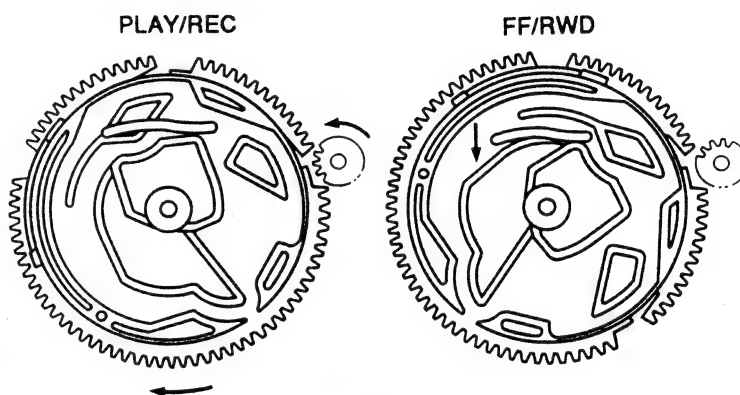


Fig. 15

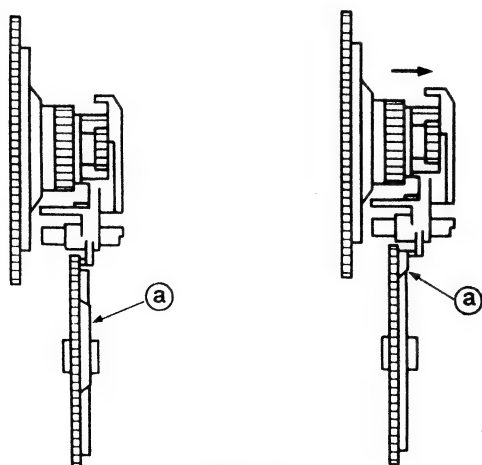


Fig. 16

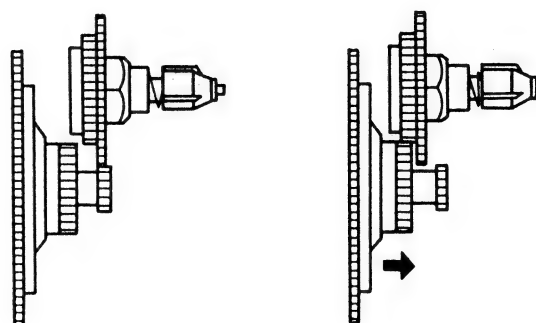
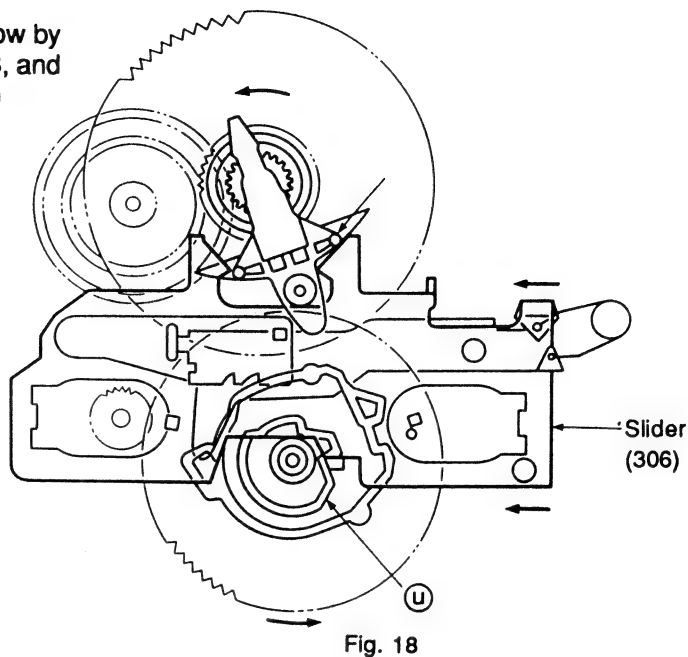


Fig. 17

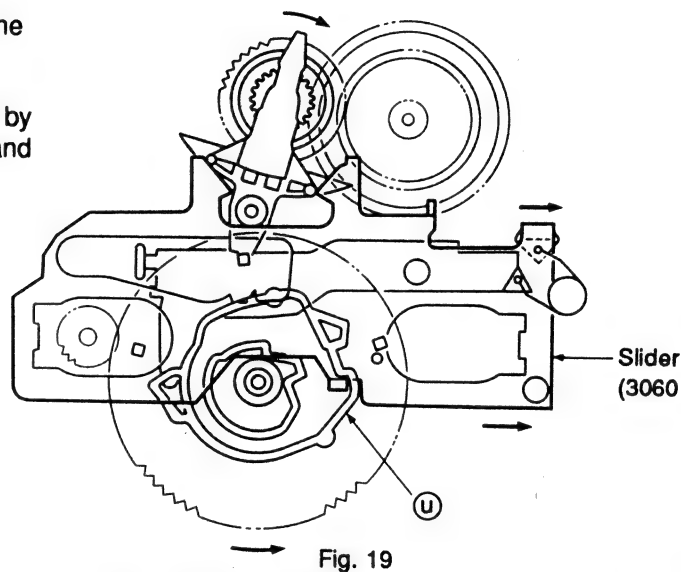
MECHANISM DESCRIPTION

- Slider (306) is moved in the direction of the arrow by cam Ⓢ of the cam gear, as shown in Figure 18, and a fast-forward operation takes place. (Fig. 18)



Rewind operation

1. Enter the RVS PLAY mode with the head in the FWD PLAY position.
2. to 5) same as for the fast-forwards operation.
6. Slider (306) is moved in the direction of the arrow by cam Ⓢ of the cam gear, as shown in Figure 19, and a rewind operation takes place. (Fig. 19)



Cue/review operation

(Cue and review operations are effected by combinations of the PLAY, FF, RWD, and STOP operations.)

FWD PLAY → CUE

The solenoid is energized in the FWD PLAY mode, and the FF mode is entered.

FWD PLAY → REVIEW

1. Change the FWD PLAY mode to the STOP mode.
2. Enter the RWD mode.

RVS PLAY → CUE

The solenoid is energized in the RVS PLAY mode, and the RWD mode is entered.

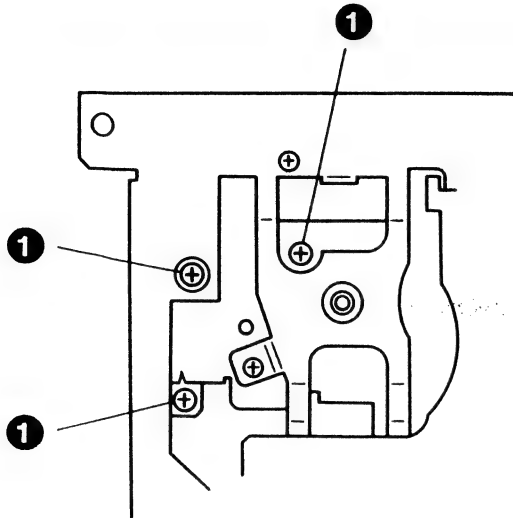
RVS PLAY → REVIEW

1. Change the RVS PLAY mode to the STOP mode.
2. Enter the RVS PLAY mode.
3. Enter the FF mode.

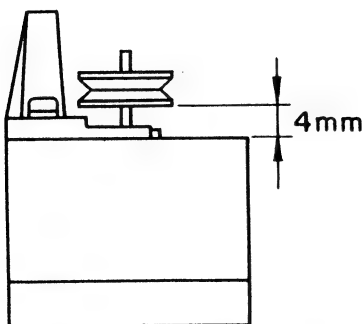
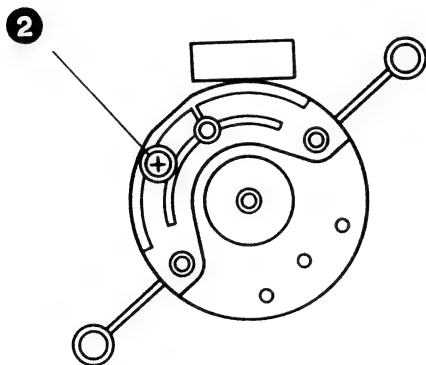
MECHANISM DESCRIPTION

Replacing the main motor

- 1 Remove the hub (RVS). (Lift the head slider.)
- 2 Desolder the twin cable from the motor PCB.
- 3 Remove the three screws holding the motor.



- 4 Remove the spacer.



Install a new motor by reversing the above procedure.

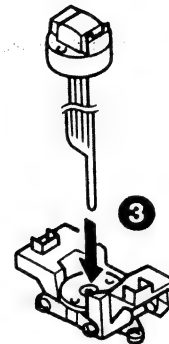
Replacing the record/playback head

a) Remove

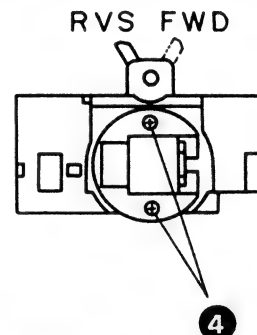
- 1 Remove the head lead PCB.
- 2 Remove the head block. (The head is reversed when stopped.)
- 3 Remove the head from its base.
- 4 Desolder the head lead from the head.
- 5 Desolder the head lead from the PCB.

b) Installation

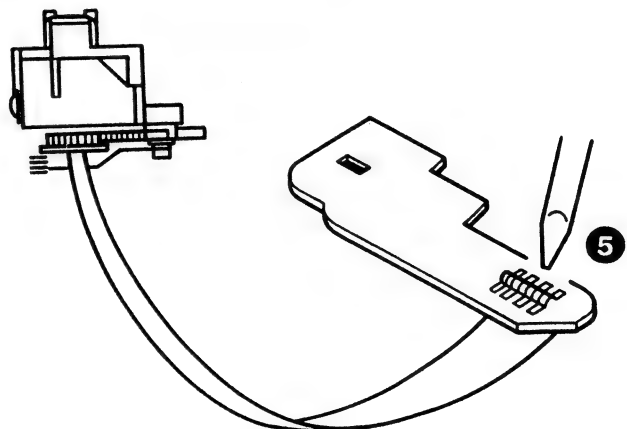
- 1 Solder the head lead to the new head.
- 2 Pass the head lead through the head block.



- 8 Align the new head and secure it with screws.



- 9 Solder the head lead.



- 10 Install the head block and PCB on the mechanism.

MECHANISM DESCRIPTION

Removing the hub mount

- (a) Remove the plastic washer from the reverse hub, and lift the head slider slightly.
- (b) Forward hub

- 1 Remove the pinch roller assembly.
- 2 Remove the springs (332, 326, 331, 334, and 327).
- 3 Remove the eject assembly.
- 4 Remove the release lever.
- 5 Remove the switch lever (309).
- 6 Remove the spring for holding the cassette.
- 7 Push the head slider up, and remove it from the chassis.
- 8 Remove the forward hub assembly.

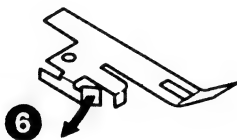
Reassemble the hub mount by reversing the above procedure.

Replacing the solenoid

- 1 Remove the motor. (See the procedure for replacing the main motor.)
- 2 Remove the forward and reverse flywheels.
- 3 Remove the clutch assembly.
- 4 Remove the pinch roller assembly.
- 5 Remove the springs (332, 326, 334, 333, 331, and 330).
- 6 Remove the cassette retainer.

(Bend the retainer in the direction of the arrow, and pull it forward.)

- 7 Remove the eject assembly.
- 8 Remove the release lever.
- 9 Remove the switch lever (309).
- 10 Remove the PCB and head slider.
- 11 Remove the forward hub.



- 12 Remove the six screws.
- 13 Straighten the tongue on the rear left of the chassis.
- 14 Lay the mechanism on its front, and remove the sub-chassis.

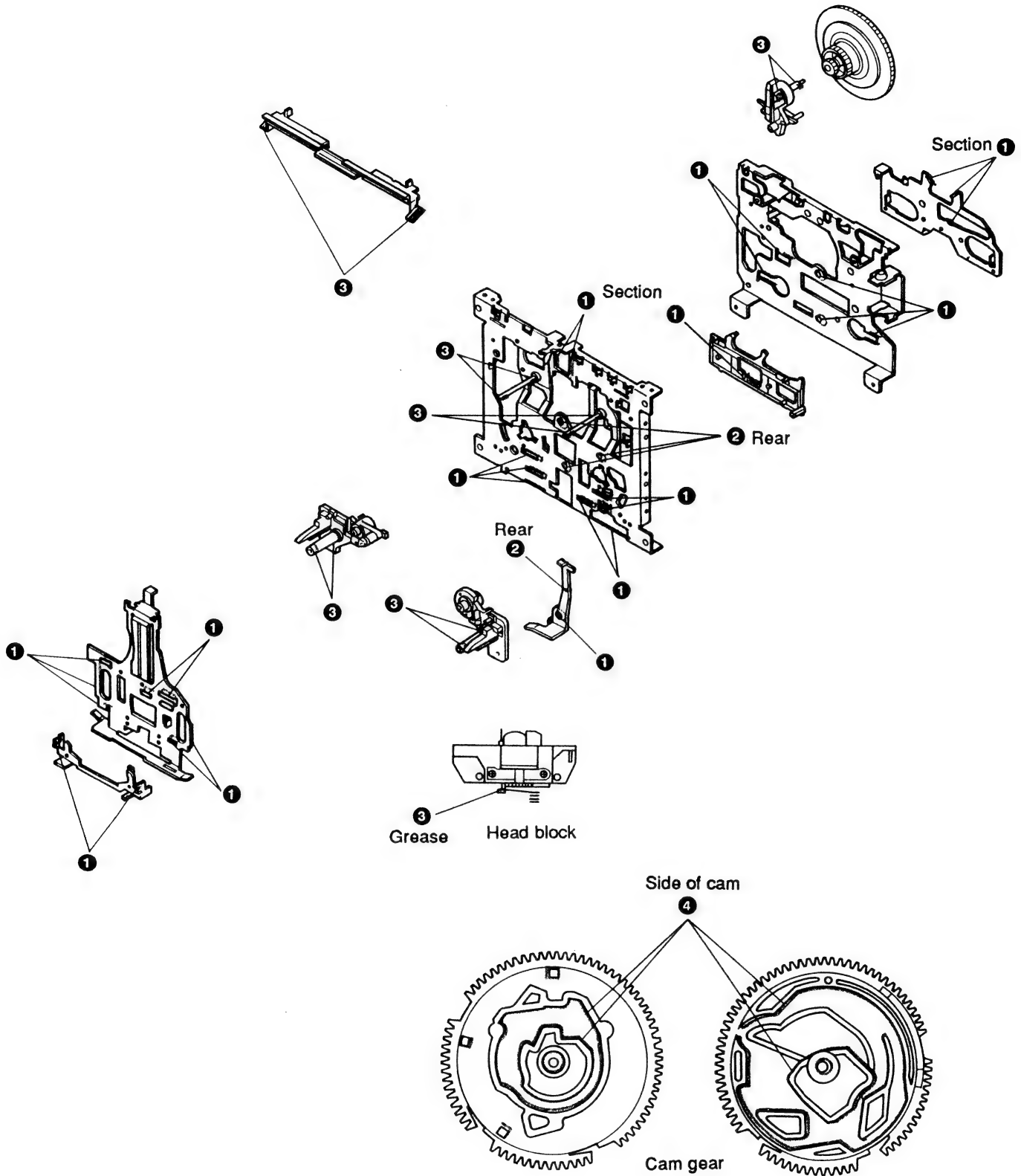
All the parts can be removed with the mechanism like this.

Reassembly method

- 1 Lay chassis 801 on its front.
- 2 Put slider 313 at the center, the clutch assembly with spring 324 at the center, and the cam gear and play arm at the PLAY position. (Tape the top of the clutch assembly to hold it in place.)
- 3 Put the sub-chassis with the solenoid, PCB (SW), and slider 306 over the chassis.
- 4 Bend the tongue of the chassis and tighten the six screws.
- 5 Lay the chassis on its back.
- 6 Fit the forward hub (with reflection plate).
- 7 Set the cam gear to the STOP position.
- 8 Fit the head slider. (If the head base has been removed, fit it.) RVS position
- 9 Fit the switch lever (309) and cassette retainer.
- 10 Fit the head lead PCB.
- 11 Fit the release lever.
- 12 Fit the eject assembly.
- 13 Fit the springs (326, 332, 324, 333, 334, 330, and 331).
- 14 Fit the pinch roller assembly.
- 15 Fit the clutch gear.
- 16 Fit the forward and reverse flywheels.
- 17 Fit the motor. (Fit the belt.)
- 18 Fit the reverse hub.
- 19 Solder the solenoid and motor lead.

POINT WHICH SHOULD BE GREASED

Dow Corning



TIMING CHART

PORT NAME	No	STOP TO FWD REC (PLAY ----)	UNIT ms
KEY IN			
SOL	*17		
MTR	*16		
MMS	*15		
L M	13		
R M	12		
REC	11		
BIAS	*14		

PORT NAME	No	STOP TO RVS REC (PLAY ----)	UNIT ms
KEY IN			
SOL	*17		
MTR	*16		
MMS	*15		
L M	13		
R M	12		
REC	11		
BIAS	*14		

PORT NAME	No	FWD & RVS REC (PLAY ----) TO STOP	UNIT ms
KEY IN			
SOL	*17		
MTR	*16		
MMS	*15		
L M	13		
R M	12		
REC	11		
BIAS	*14		

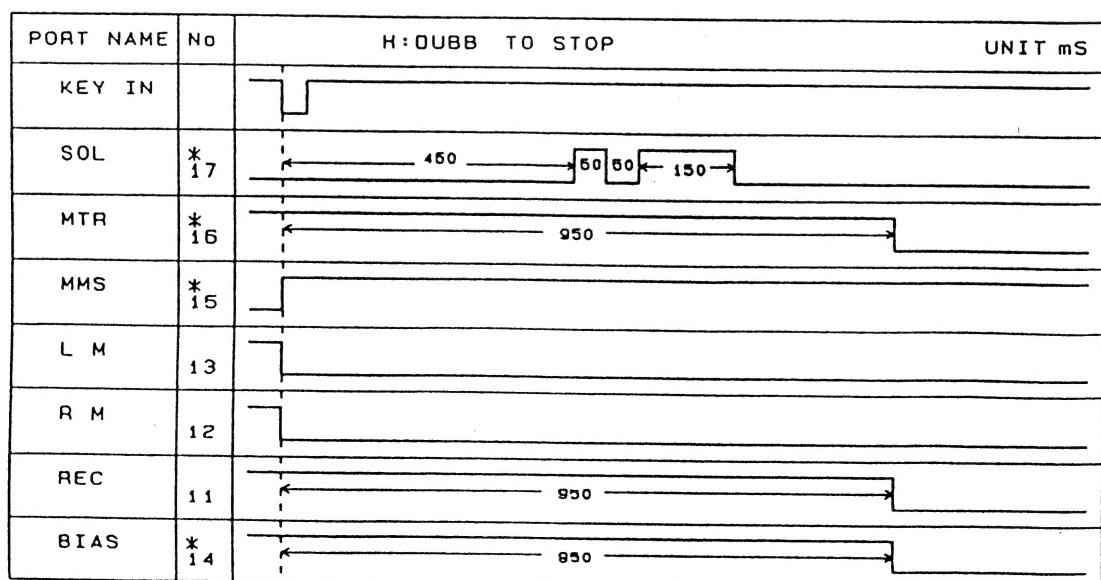
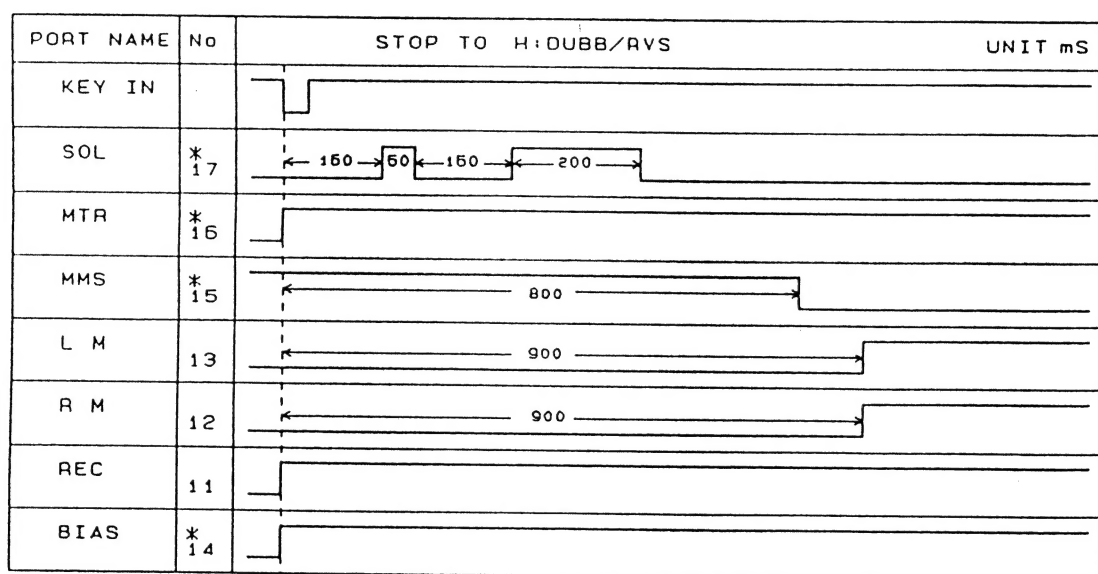
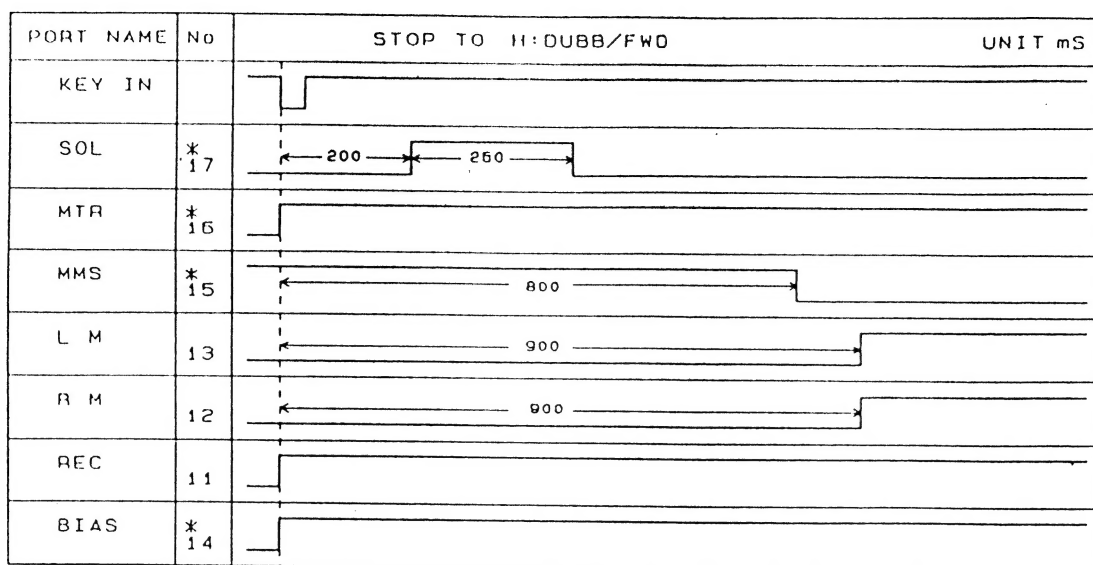
TIMING CHART

PORT NAME	No	STOP TO FF	UNIT mS
KEY IN			
SOL	*17		
MTR	*16		
MMS	*15		
L M	13		
R M	12		
REC	11		
BIAS	*14		

PORT NAME	No	STOP TO RWD	UNIT mS
KEY IN			
SOL	*17		
MTR	*16		
MMS	*15		
L M	13		
R M	12		
REC	11		
BIAS	*14		

PORT NAME	No	FF&RWD TO STOP	UNIT mS
KEY IN			
SOL	*17		
MTR	*16		
MMS	*15		
L M	13		
R M	12		
REC	11		
BIAS	*14		

TIMING CHART



TIMING CHART

PORT NAME	No	STOP TO CUE	UNIT mS
KEY IN			
SOL	*17		
MTR	*16		
MMS	*15		
L M	13		
R M	12		
REC	11		
BIAS	*14		

PORT NAME	No	STOP TO REVIEW	UNIT mS
KEY IN			
SOL	*17		
MTR	*16		
MMS	*15		
L M	13		
R M	12		
REC	11		
BIAS	*14		

PORT NAME	No	CUE/REVIEW TO STOP	UNIT mS
KEY IN			
SOL	*17		
MTR	*16		
MMS	*15		
L M	13		
R M	12		
REC	11		
BIAS	*14		